What is claimed is:

[Claim 1] 1. A channel sharing method, comprising:

providing a plurality of channels, wherein each of the channels comprises a time interval of signal transmission;

providing a time slot, wherein a width of the time slot is X times of a maximum value of all the time intervals, and X is a positive number; each of the channels is generated by a permutation of at least one repeat time, and the repeat time is M times of the width of the time slot, wherein M is an integer larger than 0, and a first time slot of the repeat time comprises a signal, and a maximum time span of the signals in each of the channels is the time interval of each of the channels; and

arranging all the channels so that at least one of the signals in each of the channels is not collided with the signals of the other channels in a worst time delay.

[Claim 2] 2. The channel sharing method of claim 1, wherein the width of the slot is twice of the maximum value of all the time intervals.

[Claim 3] 3. The channel sharing method of claim 1, wherein at least one of the channels comprises two repeat times with different lengths.

[Claim 4] 4. The channel sharing method of claim 1, wherein the step of arranging the channels comprises checking a preset table.

[Claim 5] 5. The channel sharing method of claim 1, wherein the step of arranging the channels comprises a computation by a program or a software.

[Claim 6] 6. A channel sharing device, comprising:

a plurality of transmission devices, wherein each of the transmission devices comprises a transmitter and an encoder, wherein the encoder generates a channel with a signal, and the transmitter transmits a wireless signal; and

a plurality of receiving devices, wherein each of the receiving devices comprises a receiver and a decoder, wherein the receiver receives the wireless

signal, the decoder decodes the wireless signal to obtain the signal, wherein each of the channels comprises:
a time interval and a time slot, wherein a width of the time slot is X times of a maximum value of the time intervals of the channels, and X is a positive number; each of the channels is generated by a permutation of at least one repeat time, and the repeat time is M times of the width of the time slot, wherein M is an integer larger than 0, and a first time slot of the repeat time comprises the signal, and a maximum time span of the signals in each of the channel is the time interval of each of the channels; all the channels are arranged so that at least one of the signals in each of the channels is not collided with the signals of the other channels in a worst time delay.

[Claim 7] 7. The channel sharing device of claim 6, wherein each of the transmission devices corresponds to at least one of the receiving devices.

[Claim 8] 8. The channel sharing device of claim 6, wherein the encoder comprises a first clock generator and first channel generator, wherein the first clock generator generates a clock signal, and the first channel generator generates the channel comprising the signal.

[Claim 9] 9. The channel sharing device of claim 8, wherein the first channel generator comprises a preset table, a program or a software.

[Claim 10] 10. The channel sharing device of claim 6, wherein the decoder comprises a second clock generator and a second channel generator, wherein the second clock generator generates a clock signal, and the second channel generator decodes the wireless signal to obtain the signal.

[Claim 11] 11. The channel sharing device of claim 10, wherein the second channel generator comprises a preset table, a program or a software.

[Claim 12] 12. The channel sharing device of claim 6, wherein the width of the slot is twice of the maximum value of all the time intervals.

[Claim 13] 13. The channel sharing device of claim 6, wherein at least one of the channels comprises two repeat times with different lengths.

[Claim 14] 14. The channel sharing device of claim 6, wherein the transmitter or the receiver comprises a radio frequency (RF) generator and an antenna.